

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

**ARDIS THOMPSON and
GLORIA THOMPSON,**

Plaintiffs,

v.

ORKIN, LLC,

Defendant.

1:20-CV-13085-TGB-PTM

HON. TERRENCE G. BERG

**OPINION AND ORDER
GRANTING IN PART AND
DENYING IN PART
DEFENDANT'S MOTION TO
EXCLUDE PLAINTIFFS'
EXPERT WITNESSES
(ECF NO. 44)
AND DENYING PLAINTIFFS'
MOTION TO EXCLUDE
DEFENDANT'S EXPERT
WITNESSES
(ECF NO. 45)**

In this toxic tort case, Plaintiffs Ardis Thompson and Gloria Thompson allege that Defendant Orkin, LLC negligently over-applied a pesticide to their home on two occasions, causing the Thompsons to suffer physical and emotional injuries and economic damages.

Now before the Court are Defendant's Motion to Exclude Plaintiffs' Expert Witnesses, ECF No. 44, and Plaintiffs' Motion to Exclude Defendant's Expert Witnesses, ECF No. 45. Both motions are fully briefed, and the Court will consider the motions without a hearing. ECF Nos. 52, 58.

For the reasons set forth below, the Court **GRANTS IN PART** and **DENIES IN PART** Defendant's Motion to Exclude Plaintiffs' Expert Witnesses and **DENIES** Plaintiffs' Motion to Exclude Defendant's Expert Witnesses.

I. BACKGROUND

A. Factual Background

In May 2018, Plaintiffs Gloria and Ardis Thompson contacted Defendant Orkin, LLC for service because Mrs. Thompson stated she was experiencing an "itching" which she attributed to bug bites. G. Thompson Dep. 55:25–56:17, 80:8–81:19, ECF No. 44-8, PageID.632, 638. On May 31, 2018, Orkin technician Paul Hutchinson treated the Thompsons' bedroom for fleas using PT Alpine Flea and Bug Pressurized Insecticide ("PT Alpine"), manufactured by BASF. ECF No. 44-6, PageID.577.

PT Alpine is a non-restricted use pesticide, meaning it is registered with the Environmental Protection Agency ("EPA") and the EPA has reviewed and approved it for general use by consumers and that no special license or training is necessary to use it. Christopher Weis Dep. 25:2–19, ECF No. 44-4, PageID.504; ECF No. 44-4. The PT Alpine label states that it "Kills fleas for up to 30 days. Kills hatching flea eggs for up to 7 months.... FOR USE IN: Apartments, Commercial Structures, Homes, Hotels, Kennels, Motels, and Veterinary Clinics." ECF No. 44-2, PageID.454. The label provides that it should be applied "at the rate of 20 ounces [one can] for up to 2,625 square feet (10 ounces [half can] for

up to 1,300 square feet), applying in a sweeping motion at a speed of 1 foot per second. **DO NOT** apply more than 20 ounces per 2,625 square feet.” *Id.* PageID.456. And users are directed to “[v]acate areas to be treated and **DO NOT** reoccupy or contact treated surfaces until dry.” *Id.*

The “Precautionary Statements” section of the PT Alpine label, the subsection labelled “Hazards to Humans and Domestic Animals,” provides:

CAUTION. Contains Petroleum Distillate. Avoid contact with skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Id. PageID.455. The “First Aid” section of the label further provides that if PT Alpine comes in contact with the skin to (1) “[t]ake off contaminated clothing” (2) “[r]inse skin immediately with plenty of water for 15 to 20 minutes” and (3) “[c]all a poison control center or doctor for treatment or advice.” *Id.*

At the Thompsons’ regular pest control visit on June 28, 2018, Mrs. Thompson informed Orkin employee Mike Baker that she was still experiencing what she believed to be insect bites. G. Thompson Dep. 55:25–56:17, 80:9–81:19, ECF No. 44-8, PageID.632, 638. In response, Baker applied a second PT Alpine flea treatment to the Thompsons’ house on July 18, 2018. *Id.* 113:15–19, PageID.646; ECF No. 44-9, PageID.696. The service ticket for that second application states that the Orkin technician “treated all the carpeted rooms and tiled kitchen and

bathrooms” and lists the following locations: bathroom, bedroom, kitchen, living room. ECF No. 44-9, PageID.696. Baker instructed the Thompsons to leave the house for at least four hours following the treatment, G. Thompson Dep. 80:8–81:5, ECF No. 44-8, PageID.638, and the Thompsons testified that they did not return to their home for over eight hours. *Id.* at 78:1–18; A. Thompson Dep. 67:5–68:24, ECF No. 44-12, PageID.784.

Upon returning to the house that evening, the Thompsons state that the carpeting on the floor in the house was still damp. G. Thompson Dep. 75:13–18, ECF No. 44-8, PageID.637; A. Thompson Dep. 28:12–22, ECF No. 44-12, PageID.774. Mrs. Thompson testified that she walked on the carpet barefoot and afterwards felt a “burning” sensation that “starts from the inside out,” extending “[a]ll over [her] body.” G. Thompson Dep. 47:1–7, 58:5–9, 70:21–71:6, ECF No. 44-8, PageID.630, 633, 636. That evening, Mrs. Thompson bathed with water because of the burning sensation, and Mr. Thompson took a shower. *Id.* 117:2–24, PageID.647. Mr. Thompson testified that a couple of days after the PT Alpine application he “started feeling this burning in my feet” which led to “numbness” and “tingling” in his feet. A. Thompson Dep. 28:24–29:21, ECF No. 44-12, PageID.774.

Approximately three weeks later, on August 9, 2018, Mrs. Thompson went to the Covenant Hospital Emergency Department reporting a “burning sensation to her entire body.” ECF No. 44-11,

PageID.730. The emergency room records document that Mrs. Thompson has a history of anxiety and rheumatoid arthritis and that upon examination she had no rash or skin color change. *Id.* PageID.731–32. The doctor noted that Mrs. Thompson complained that she had been exposed to PT Alpine several weeks ago when her home was treated for fleas, and he noted that he “highly doubt[ed] that an exposure several weeks ago would be causing [Mrs. Thompson’s] symptoms.” *Id.* The doctor further noted that he “did speak with poison Control” and that “[t]hey believe this exposure is less likely to be causing the patient’s symptoms.” *Id.* PageID.730–32. However, the doctor advised Mrs. Thompson “to have her carpets washed as continued exposure may be causing her symptoms.” *Id.* PageID.732. The doctor diagnosed Mrs. Thompson with diffuse pain and dermal chemical exposure. *Id.*

Mr. Thompson claims that while he felt “numbness,” “tingling,” and “burning” in his feet a couple of days after the July 18, 2018 PT Alpine treatment, he did not seek medical treatment for these symptoms at that time. A. Thompson Dep. 28:4–29:13, 32:20–33:1, ECF No. 44-12, PageID.774–75. Mr. Thompson testified that he did, however, talk to his regular doctor about “the situation that was happening” approximately six months later, in January 2019 during his Medicare annual wellness visit. *Id.* 131:22–132:18, PageID.800. At that visit, Mr. Thompson reported “[a] little itching” on his face and a burning feeling in his feet. *Id.* 134:8–135:5, PageID.801.

On November 29, 2018, the Thompsons filed a complaint with the Michigan Department of Agriculture and Rural Development (“MDARD”) against Defendant concerning the two PT Alpine applications in their home. MDARD Inspection Report, ECF No. 44-13, PageID.820. MDARD investigated the complaint and on December 3, 2018, collected five swab samples, 1 clothing sample, and 1 piece of carpet sample at the Thompsons’ home and tested these samples for the presence of the three active ingredients in PT Alpine: dinotefuran, pyriproxyfen, and prallethrin. *Id.* at PageID.826. Each of the non-blank test samples contained trace amounts of dinotefuran and pyriproxyfen, and only one test sample contained trace amounts of prallethrin. *Id.* PageID.820, 826.

MDARD concluded that “[s]ample results show that trace amounts of the active ingredients in PT Alpine [] in the [Thompsons’] home while application records indicate the product was slightly over applied during the May 31st, 2018 application to the [Thompsons’] home.” *Id.* PageID.820. MDARD found the following violations:

1. MCL 324.8311(9) & R 285.637.4(a): Orkin, LLC failed to apply PT Alpine Flea & Bed Bug Pressurized Insecticide, (EPA Reg. No. 499-540), in a manner that is consistent with the pesticide label during the May 31st, 2018, application to the Thompson’s home by applying over the allowed label limit per square foot.
2. MCL 324.8313(1): Orkin, LLC applied PT Alpine Flea & Bed Bug Pressurized Insecticide, (EPA Reg. No. 499-540),

to the Thompson's home on July 1[8]th, 2018, with commercial applicator license that was suspended by MDARD on June 28th, 2018.

3. R 285.636.12(1): Orkin, LLC failed to notify MDARD of the change of the firm's qualified applicator named on the Saginaw branch license application when Mr. Sager moved from the Saginaw branch to the Pontiac office and no notarized statement of experience was submitted for the Saginaw branch's new qualified applicator.
4. R 285.636.15(2)(c)(g): Orkin, LLC failed to include amount of pesticide end use dilution applied and rate of application on the firm's May 31st, 2018, application record following the application of PT Alpine Flea & Bed Bug Pressurized Insecticide, (EPA Reg. No. 499-540), to the Thompson's home.

Id.; Notice of Violation, ECF No. 51-3, PageID.1688–89. MDARD fined Orkin \$1,000.00, which Orkin paid on March 28, 2019. W. Klinger Decl. ¶¶ 7–8, ECF No. 51-3, PageID.1686.

B. Procedural Background

On or about June 29, 2020, the Thompsons sued Defendant Orkin in the Saginaw County Circuit Court. Compl., ECF No. 1-2, PageID.16–22. Orkin removed this case to this Court on November 19, 2020. ECF No. 1.¹

The Thompsons assert a negligence claim against Orkin, alleging that Orkin negligently applied PT Alpine at their home on May 31, 2018 and July 18, 2018. Compl., ECF No. 1-2, PageID.18–20. The Thompsons

¹ On September 1, 2023, this case was reassigned from retired District Judge Victoria A. Roberts to the undersigned.

also complain of “statutory and ordinance violations” by Orkin for alleged violations of certain Michigan statutes and ordinances related to the application of PT Alpine. *Id.* PageID.20–22. The Thompsons allege that Orkin’s negligence caused their physical injuries, including “rash, burning sensation, skin irritation, severe dermatitis, tingling in toes,” as well as mental anguish/distress and loss of consortium. ECF No. 47-2, PageID.1561. The Thompsons seek monetary damages for pain, suffering, mental anguish, and loss of consortium, and for cleaning and floor replacement, as well as reimbursement for clothing and other property they discarded under the belief that it was contaminated. *Id.* Specifically, the Thompsons claim \$45,000 in replacement costs for “personal property in the form of clothing, shoes, curtains, and furniture,” *id.* PageID.1559–59, and \$19,252.75 for remediation work to their home provided by ServPro, including removing floor coverings. A. Thompson Dep. 76:11–77:6, 116:14–119:5 ECF No. 44-12, PageID.786, 796–97. *See also* ECF No. 51-2, PageID.1650–51. The Thompsons also assert they paid \$6,399.00 for new flooring. ECF No. 51-2, PageID.1650, 1682–83.

On October 31, 2023, following the close of discovery, Defendant Orkin filed a Motion to Exclude Plaintiffs’ Experts. ECF No. 44. Orkin seeks to exclude the Thompsons’ proffered experts, Dr. David Goldsmith (epidemiologist), Dr. Christopher Weis (toxicologist), and Dr. Gerald Shiener (psychiatrist), arguing that these experts’ testimony, opinions, and reports do not meet the necessary reliability and relevance

requirements of the Federal Rules of Evidence and the standard espoused in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) and its progeny.

The Thompsons filed a Response in opposition to Defendant Orkin's motion, ECF No. 46, and Orkin filed a reply brief. ECF No. 50.

Also on October 31, 2023, the Thompsons filed a Motion to Exclude Defendant Orkin's Experts. ECF No. 45. The Thompsons seek to exclude Orkin's four proposed expert witnesses, Dr. Jeffrey Parker (M.D., conducted an IME), Ryan Weidling, (M.P.H., human health risk assessment), Elaine Freeman (M.S., pharmacology/toxicology), and Dr. Shamarial Roberson (D.Ph., M.P.H., epidemiology), arguing that these experts' testimony, opinions, and reports are unreliable and/or unhelpful to the trier of fact.

Orkin filed a Response in opposition to the Thompsons' motion, ECF No. 47, and the Thompsons filed a reply. ECF No. 49.

On January 9, 2024, Defendant Orkin filed a Motion for Summary Judgment, seeking dismissal of the Thompsons' claims. ECF No. 51. That motion is also fully briefed. ECF Nos. 54, 55.

II. LEGAL STANDARD

District courts function as gatekeepers to ensure that expert testimony is both relevant and reliable. *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 589 (1993). Courts apply this gatekeeping function to scientific expert testimony and other expert testimony involving

technical or specialized knowledge. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999). These requirements are codified under the Federal Rules of Evidence, which provide as follows:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if the proponent demonstrates to the court that it is more likely than not that:

- a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- b) the testimony is based on sufficient facts or data;
- c) the testimony is the product of reliable principles and methods; and
- d) the expert's opinion reflects a reliable application of the principles and methods to the facts of the case.

Fed. R. Evid. 702.

In evaluating the reliability of expert testimony, *Daubert* provides a non-exclusive list of factors. This includes “testing, peer review, publication, error rates, the existence and maintenance of standards controlling the technique’s operation, and general acceptance in the relevant scientific community.” *United States v. Langan*, 263 F.3d 613, 621 (6th Cir. 2001) (citing *Daubert*, 509 U.S. at 593–94). Parties offering expert witness testimony must establish the foundational elements of admissibility by a preponderance of the evidence. *Nelson v. Tenn. Gas Pipeline Co.*, 243 F.3d 244, 251 (6th Cir. 2001) (citing *Daubert*, 509 U.S.

at 592, n.10). District courts have “ ‘considerable leeway in deciding ... how to go about determining whether particular expert testimony is reliable.’” *United States v. Sanders*, 59 F. App’x 765, 767 (6th Cir. 2003) (quoting *Kumho*, 526 U.S. at 152).

Daubert factors, however, are not dispositive in every case and should be applied only “where they are reasonable measures of reliability of expert testimony.” *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 529 (6th Cir. 2008). “[R]ejection of expert testimony is the exception, rather than the rule.” *Id.* at 530; *In re E. I. du Pont de Nemours & Co. C-8 Pers. Injury Litig.*, 337 F. Supp. 3d 728, 739 (S.D. Ohio 2015) (“Any doubts regarding the admissibility of an expert’s testimony should be resolved in favor of admissibility.”) (citations omitted). Instead, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596.

III. DISCUSSION

A. Defendant’s Motion to Exclude Plaintiffs’ Expert Witnesses (ECF No. 44)

Defendant Orkin moves to exclude the testimony, opinions, and reports of the Thompsons’ three proposed experts: (1) Dr. David Goldsmith (Ph.D., epidemiology), (2) Dr. Christopher Weis (Ph.D., toxicology), and (3) Dr. Gerald Shiener (M.D., psychiatry). Orkin does not argue that these three expert witnesses are not qualified, but instead

argues that these experts' testimony, opinions, and reports do not meet the necessary reliability and relevance requirements of the Federal Rules of Evidence and the standard espoused in *Daubert* and its progeny.

1. Dr. David Goldsmith

Dr. David Goldsmith, an occupational and environmental epidemiologist,² earned his Master of Science in Public Health and Ph.D. degrees in epidemiology from the University of North Carolina in 1977 and 1983, respectively. He is currently a Professorial Lecturer in the Department of Environmental and Occupational Health in the George Washington University Milliken Institute School of Public Health in Washington, D.C., a position he has held since 1999. ECF No. 44-14, PageID.831. Dr. Goldsmith states that the Thompsons asked him in this case to “summarize the current epidemiology evidence relating to pesticide exposure to PT Alpine Flea and Bedbug Insecticide containing petroleum distillates and the risk of depression and skin irritation.” *Id.* (“Essentially, this brief report briefly addresses the published epidemiology and toxicology literature demonstrating a link between petroleum distillates and the risk of depression and skin irritation.”).

² “Epidemiology is the study of ‘the incidence, distribution, and etiology of disease in human populations.’” *Baker v. Chevron USA, Inc.*, 680 F. Supp. 2d 865, 875 (S.D. Ohio 2010) (quoting Federal Judicial Center, Reference Manual on Scientific Evidence (2nd ed. 2000), at 335). It is “usually the best evidence of general causation in toxic tort cases.” *Id.* (citing *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 882 (10th Cir. 2005)).

Dr. Goldsmith opines in his Report that (1) both Mr. and Mrs. Thompson’s “depression is related to exposure to petroleum distillates (found in the [Material Safety Data Sheet] MSDS for PT Alpine Flea and Bedbug Insecticide) [as] has been found in the published literature from the Agricultural Health Study for both women and men,” (2) “Mrs. Thompson’s severe dermatitis and skin irritation was listed on the human health effects for the product Orkin used to treat their house and was backed by dermal studies in mice,” and (3) “[a]ll of this evidence points to Orkin’s responsibility for the pesticide intoxication suffered by Rev. and Mrs. Thompson.” *Id.* PageID.835. Dr. Goldsmith concludes that “the epidemiology evidence shows that there is more likely than not a causal link between residential overspraying of PT Alpine Flea and Bedbug Insecticide containing petroleum distillates that led to [the Thompsons’] 5-month in-home exposure and their depression and dermatitis ailments.” *Id.*

In a diversity action, such as this one, federal law governs procedural issues, such as the rules governing the admission of expert testimony, and state law governs substantive issues. *Legg v. Chopra*, 286 F.3d 286, 289 (6th Cir. 2002). Under Michigan law, in a toxic tort case, the plaintiff must present admissible general-causation and specific-causation evidence through proof that the toxic substance was capable of causing and did cause the plaintiff’s alleged injury. *Pluck v. BP Oil Pipeline, Co.*, 640 F.3d 671, 676–77 (6th Cir. 2011); *see also Hendrian v.*

Safety-Kleen Systems, Inc., No. 08-14371, 2015 WL 4770966, at *4 (E.D. Mich. Aug. 13, 2015) (“For general causation, the issue is whether the chemicals were capable of causing the victim’s medical conditions, whereas with specific causation, the issue is whether the chemicals did in fact cause the plaintiff’s specific medical conditions.”) (citing *Trice v. Oakland Dev.*, No. 278392, 2008 WL 7488023, at *11 (Mich. Ct. App. Dec. 16, 2008)). Thus, to prove causation in this case, the Thompson must show: “(1) that the alleged toxin was capable of causing injuries like those suffered by [the Thompsons] (general causation) and (2) that the toxin was the cause of [the Thompsons’] injury (specific causation).” *Hendrian*, 2015 WL 4770966, at *4. Both causation inquiries involve scientific assessments that generally must be established through the testimony of a medical expert. *Pluck*, 640 F.3d at 677 (“Without this testimony, a plaintiff’s toxic tort claim will fail.”) (internal quotation marks and citation omitted); *but see Gass v. Marriott Hotel Servs., Inc.*, 558 F.3d 419, 430 (6th Cir. 2009) (“Michigan law does not require Plaintiffs to present expert testimony regarding the standard of care applicable to spraying chemicals in the confined quarters of an occupied room.”).

The Thompsons assert that Dr. Goldsmith is a general causation expert only. ECF No. 46, PageID.1238; *see also* ECF No. 44-14, PageID.831 (noting that his “summary will consider ... the assessment of general causation”). “General causation is established by demonstrating, often through a review of scientific and medical literature that exposure

to a substance can cause a particular disease.” *In re Dow Corning Corp.*, 541 B.R. 643, 654 (E.D. Mich. 2015), *aff’d*, 667 F. App’x 538 (6th Cir. 2016).

Orkin argues that Dr. Goldsmith’s opinions should be excluded because he has not proffered reliable scientific evidence to support his general causation opinions. Orkin asserts that Dr. Goldsmith admits he could not find any case reports or case studies specifically addressing PT Alpine or its active ingredients, and that his cited studies do not support his opinions. Orkin further argues that the science Dr. Goldsmith relies on does not support his opinions and does not fit the facts of this case, that he employs faulty methodology, and that he failed to include the Thompsons’ medical histories in his epidemiological analysis.

a. Dr. Goldsmith’s opinion that the Thompsons’ depression is related to their exposure to petroleum distillates (found in the MSDS for PT Alpine Flea and Bedbug Insecticide)

Dr. Goldsmith opines that Mr. and Mrs. Thompsons’ “depression is related to exposure to petroleum distillates (found in the MSDS for PT Alpine Flea and Bedbug Insecticide) [as] has been found in the published literature from the Agricultural Health Study for both women and men.” ECF No. 44-14, PageID.835. Dr. Goldsmith cites three studies in support of this opinion, which he summarizes as follows:

- (1) the Beard (2013) study consisting of 16,893 wives of farmers (who used pesticides) who never reported

depression when they first enrolled in the study during 1993–1997 and reported in 2005–2010 whether they had a diagnosis of depression, finding after adjustment for several confounding variables, that depression was linked with diagnosed pesticide poisoning, but not any specific pesticide product, in North Carolina, but not Iowa.

- (2) the Beard (2014) study examined 21,208 men—474 of whom had clinical depression at enrollment in 1993–1997, 540 with depression at enrollment and at follow-up in 2005–2010, and 688 with depression only at follow-up—and found after adjustment for age, state, and many other factors, that there was a strong risk for prior diagnosis of pesticide poisoning among those diagnosed with depression at enrollment.
- (3) the Beseler (2008) study was conducted among 651 Colorado farmers, and the authors reported that pesticide poisoning was significantly associated with depression in three years of follow-up after adjusting for age, gender, and marital status.

Id. Dr. Goldsmith explained in his Report that “[b]ecause farmers (who are a large occupational group using pesticides containing PD) have been known to have higher rates of depression, it is reasonable that they should be studied.” ECF No. 44-14, PageID.834 (but noting that these farmers are also “exposed to fuels, solvents, and other organic liquids” as well).

Rule 702 requires that the expert’s testimony assist the trier of fact. “This requirement has been interpreted to mean that scientific testimony must ‘fit’ the facts of the case, that is, there must be a connection between the scientific research or test result being offered and the disputed

factual issues in the case in which the expert will testify.” *Pride v. BIC Corp.*, 218 F.3d 566, 578 (6th Cir. 2000) (citing *Daubert*, 509 U.S. at 592).

Orkin argues that the “fit” between three agricultural studies cited in Dr. Goldsmith’s report and the facts in this case is insufficient. Orkin states that Dr. Goldsmith admitted he could not find any cohort or case-controlled studies for PT Alpine or any of its active ingredients, or any case reports or case studies of any incidents similar to the facts in this case. ECF No. 44, PageID.418, citing Goldsmith Dep. 23:10–24:17, 31:3–18, ECF No. 44-17, PageID.867, 869. Orkin asserts that Dr. Goldsmith instead cited the three studies of farmers and farmers’ wives to support his conclusion that pesticide exposure can cause depression. ECF No. 44, PageID.419–20, citing ECF No. 44-14, PageID.834. Orkin contends that these studies however do not analyze PT Alpine or even pesticides containing petroleum distillates (PDs) and thus are not relevant in this case. *Id.*

To the extent Orkin faults these three studies as not specifically examining PT Alpine or its three listed active ingredients—dinotefuran, pyriproxyfen, and prallethrin—that argument does not carry great weight.³ Orkin and its epidemiology expert, Dr. Shamarial Roberson,

³ “Active ingredients are the chemicals in a pesticide product that act to control the pests” and they “must be identified by name on the pesticide product’s label together with its percentage by weight.” <https://www.epa.gov/ingredients-used-pesticide-products/basic->

admit that epidemiological studies demonstrating a causal link between PT Alpine and the Thompsons' claimed symptoms do not exist. ECF No. 47, PageID.1324–25, citing Roberson Supp. Report at 2, ECF No. 47-2, PageID.1367 (stating that “there is no evidence identified in the literature as it relates to cases of acute or chronic pesticide-related illness directly associated with PT Alpine ... and adverse health effects.”). Dr. Goldsmith cannot be faulted for failing to cite studies that do not exist.

The Sixth Circuit rejected a similar argument in *Best v. Lowe's Home Centers, Inc.*, 563 F.3d 171 (6th Cir. 2009). In that case, the defendant argued that “no published material confirms that inhalation of the chemical in Aqua EZ can cause anosmia.” *Id.* at 180. The Sixth Circuit acknowledged that “there is no requirement that a medical expert must always cite published studies on general causation in order to reliably conclude that a particular object caused a particular illness.” *Id.* at 180–81 (quoting *Kudabeck v. Kroger Co.*, 338 F.3d 856, 862 (8th Cir. 2003) (internal quotation marks omitted)). The court noted that the expert in that case “instead [reliably] concluded from the MSDS sheet and his knowledge of medicine and chemistry that the chemicals [Aqua EZ] contains can cause damage to the nasal and sinus mucosa upon inhalation.” *Id.* at 181; *see also Bonner v. ISP Technologies, Inc.*, 259 F.3d

[information-about-pesticide-ingredients](#). “All other ingredients are called ‘inert ingredients’ by federal law” and they are “important for product performance and usability.” *Id.* However, “[t]he name ‘inert’ does not mean non-toxic.” *Id.*

924, 929 (8th Cir. 2001) (“[T]here is no requirement that published epidemiological studies supporting the expert’s opinion exist in order for the opinion to be admissible.”) (citation omitted).

However, Orkin’s other arguments regarding Dr. Goldsmith’s proposed general causation opinion that the Thompsons’ exposure to PT Alpine could cause their claimed depression require a closer look. Orkin’s strongest criticisms of Dr. Goldsmith’s opinion are that the three agricultural studies he relies on linked farmers *diagnosed* with pesticide poisoning with depression and that Dr. Goldsmith has failed to demonstrate that the pesticides in the three studies contained PDs or other chemicals similar to those in PT Alpine.⁴ Orkin correctly asserts that there is no evidence in this case that the Thompsons have been diagnosed with pesticide poisoning. Further, the study of farmers who were pesticide *applicators* and their wives’ *self-reported* exposure to agricultural pesticides over a number of years is inapposite to the facts of this case, which involves a residential pesticide applied by Orkin, not the Thompsons, and asserted exposure over a number of months, not

⁴ Orkin also argues that the Beard (2014) study relied on pesticide applicators who “self-reported” pesticide exposures and did not consider all other confounding variables that could have been responsible for their depression diagnosis, such as death of a loved one or chronic diseases. *See* Goldsmith Dep. 36:5–37:16, 40:16–41:11, ECF No. 44-17, PageID.870–71. If Dr. Goldsmith’s reliance on this study was otherwise admissible, these criticisms would go to the weight of Dr. Goldsmith’s reliance on that particular study, not necessarily its admissibility.

years. Most importantly, however, Dr. Goldsmith fails to demonstrate that the pesticides in the three studies he relies on contain PDs or other chemicals similar to those contained in PT Alpine. Rather, these studies just considered pesticides generally. *See* Goldsmith Dep. 34:2–35:23, ECF No. 44-17, PageID.870. The Beseler study considered organophosphates, a “completely different class of chemical than the class of chemicals in PT Alpine.” *Id.* 34:16–35:3, 35:12–16 (agreeing that the “mode of action for organophosphates in the human body or in animals compared to other pesticides” is “not the same as assumed to be the situation with PT Alpine.”), PageID.870. The Beard (2013) study recognized that for some pesticides, there was no demonstration of a causative effect with depression. *Id.* 56:24–57:16, PageID.875. That study concluded that “the only functional or chemical pesticide class significantly positive associated with wives’ depression” was a different class of pesticide than any of PT Alpine’s active ingredients and that the “wives’ depression was not associated with husbands’ use of most individual pesticides.” *See id.* 58:9–59:2, PageID.876.

The Thompsons respond that Orkin’s concerns with the three studies Dr. Goldsmith relies on go to the weight, not the admissibility, of Dr. Goldsmith’s opinion. ECF No. 46, PageID.1240. The Thompsons note that Orkin’s epidemiologist expert did not identify any studies that were a better “fit” or that addressed any of the chemicals found in PT Alpine. However, it is the Thompsons’ burden to demonstrate that their expert’s

opinions more likely than not meet Rule 702's admissibility requirements, *Nelson*, 243 F.3d at 251, and just because Orkin may or may not identify a "better" study does not render the Thompson's expert's evidence admissible.

The fundamental question in the general causation inquiry is whether the pesticide, including its active and inert chemicals to which the Thompsons allege they were exposed, can cause the conditions they allege. Here, that is the Thompsons' claimed depression. Orkin concedes in its reply brief that it "does not question the [three agricultural] studies' methodology" but instead faults Dr. Goldsmith's reliance on those studies in this case because they do not analyze the product at issue and they are based on inapposite facts—farmers diagnosed with pesticide poisoning and depression after years of pesticide exposure. ECF No. 50, PageID.1603 & fn.4.

The Court agrees that the three agricultural studies Dr. Goldsmith relies on to opine that the Thompsons' exposure to PT Alpine could cause depression are simply too attenuated to provide a basis for that opinion in this case. The Thompsons are not pesticide applicators; they have not produced evidence that they have been diagnosed with pesticide poisoning; and they cite no evidence that the pesticides in the three studies contained PDs or chemicals similar to those found in PT Alpine,

as opposed to pesticides in general.⁵ At best, Dr. Goldsmith could opine that repeated exposure to some unidentified pesticides have been linked to depression, but not that pesticides similar to PT Alpine have been so linked. Accordingly, the Court finds that Dr. Goldsmith's general causation opinion that PT Alpine was capable of causing the Thompson's claimed depression must be excluded.

b. Dr. Goldsmith's opinion that "Mrs. Thompson's severe dermatitis and skin irritation was listed on the human health effects for the product Orkin used to treat their house and was backed by dermal studies in mice."

Dr. Goldsmith stated in his Report that "we know that contact with PD can produce irritation and burn skin," and that a study "evaluated the medical literature and reported that human exposure to PD ... similar to what the Thompsons were exposed to, produced skin irritation and inflammation." ECF No. 44-14, PageID.834–35 (citing New Jersey Health, 2011 and Koschier (1999)). Dr. Goldsmith then explained that,

⁵ The Thompsons' argument in their Response brief that the general causation requirement of linking the product and health effects in question deals only with physical effects of different chemicals, not mental conditions, is a non-starter as courts apply the general causation requirement to claimed emotional injury as well as physical injury. *See, e.g., Grant v. BP Expl. & Prod., Inc.*, No. 17-4334, 2022 WL 2467682, at *9 n.51 (E.D. La. July 6, 2022) (noting failure of expert to address general causation between exposure to crude oil and the plaintiff's claimed anxiety and other symptoms); *Bennett v. Forest Labs.*, No. 2:06-cv-72, 2015 WL 1579404, at *3 (M.D. Fla. Apr. 9, 2015) (admitting general causation testimony that Lexapro causes worsening depression).

because “[e]thical concerns prevent studying human application of PD to skin in order to examine the dermal reactions,” there is a “need to evaluate the animal studies.” *Id.* PageID.835. Dr. Goldsmith states that those animal studies involving mice and the application of several PDs to mouse skin demonstrated that “moderate dermal irritation was a very common outcome.” *Id.*

Orkin argues that Dr. Goldsmith improperly relied on animal studies to support his opinion in this case for several reasons.⁶ Orkin first contends that there is no evidence that the Thompsons suffered skin irritation and inflammation, which is the focus of the animal studies Dr. Goldsmith cites in his Report. ECF No. 44, PageID.421. This is important

⁶ Orkin also argues that Dr. Goldsmith improperly relied on the Material Safety Data Sheet (“MSDS”) for PT Alpine to “link[] Mrs. Thompson’s skin irritation and alleged dermatitis issues with her exposure to PT Alpine based partially on the human health effects listed on the MSDS.” ECF No. 44, PageID.420–21, citing ECF No. 44-14, PageID.835. Orkin contends that reliance on the MSDS is inappropriate because Dr. Goldsmith did not indicate that he reviewed any of the science or data backing up the MSDS statements. *Id.* However, while MSDS literature may not alone be a reliable basis on which to form a general causation opinion, Dr. Goldsmith did not rely on the MSDS for PT Alpine alone in forming his opinion in this case and courts in this Circuit have admitted expert testimony based in part on MSDS literature. *See, e.g., Best*, 563 F.3d at 181 (admitting expert’s testimony based on his conclusions “from the MSDS sheet and his own knowledge of medicine and chemistry that the chemical it contains can cause damage to the nasal and sinus mucosa upon inhalation”); *Sunnycal v. CSX Transp., Inc.*, 926 F. Supp. 2d 988, 995 (S.D. Ohio 2013) (finding MSDS sheet’s warnings that exposure to the product’s chemicals could cause certain injuries sufficient in part to establish causation).

because an expert's causation opinion must be tied to the conditions plaintiffs complain they suffer. *See In re Flint Water Cases*, No. 17-10164, 2021 WL 5631706, at *6–7 (E.D. Mich. Dec. 1, 2021) (Levy, J.) (excluding expert's testimony about health conditions not suffered by the plaintiffs because it is not relevant or probative and presents a risk of significant unfair prejudice). The Thompsons claim that they experienced “burning,” “numbness, the tingling, that burning,” and “like an itch, like an itch burning,” and that Mrs. Thompson had a “scaly,” “rough places” on her skin that she treated with Vaseline. G. Thompson Dep. 63:14–64:24, 66:25–68:9, 70:7–73:17, ECF No. 44-8, PageID.634–36; A. Thompson Dep. 28:4–29:21, ECF No. 44-12, PageID.774. The animal studies Dr. Goldsmith relies on addressing exposure to PDs and resulting dermatological ailments therefore are relevant to the Thompsons' claimed health conditions of “skin irritation and inflammation.” ECF No. 46, PageID.1241. Whether the Thompsons can prove the existence of such claimed health conditions is not at issue in this motion. *See In re Flint Water Cases*, 2021 WL 5631706, at *3 (explaining that “[a]t summary judgment, the Court will consider whether Plaintiffs have raised a material question of fact as to the element of general causation. At this stage the question is only whether [the expert's] opinions are sufficiently relevant and reliable to be admissible under Federal Rule of Evidence 702 and *Daubert*.”).

Orkin also argues that the Koschier study Dr. Goldsmith relies on did not study the specific PDs found in PT Alpine. Dr. Goldsmith asserts in his Report that “Koschier (1999) evaluated the medical literature and reported that human exposure to PD, such as kerosene, aviation fuels (e.g., Jet A, JP-5 and JP-8), no. 1 fuel oil and diesel oil), similar to what the Thompsons were exposed to, produced skin irritation and inflammation.” Goldsmith Report, ECF No. 44-14, PageID.835. Dr. Goldsmith testified that the Koschier study studied hydrodesulfurized kerosine, which he admitted is “not implicated in the Thompson case,” but he asserts that the study looked at “other distillates as well.” Goldsmith Dep. 69:10–71:18, ECF No. 44-17, PageID.878–79. Dr. Goldsmith admitted that he does not know if any of the PDs addressed in the animal studies were actually present in PT Alpine. *Id.* 81:7–18 (“these [PDs] could have been in Alpine insecticide. I don’t know.”). And he agreed that “one of the results of this is that different petroleum distillates produce different results.” *Id.* The Thompsons argue, however, that kerosene is included as a PD in PT Alpine, and that even if the PDs in the animal studies differ, that goes to the weight and not admissibility of Dr. Goldsmith’s opinion. ECF No. 46, PageID.1241. The Court agrees.

“Animal studies are relevant evidence of causation where there is a sound basis for extrapolating conclusions from those studies to humans in real-world conditions.” *Hardeman v. Monsanto Co.*, 997 F.3d 941, 963 (9th Cir. 2021) (citation omitted). Indeed, the Sixth Circuit stated in

Turpin v. Merrell Dow Pharmaceuticals, Inc., 959 F.2d 1349 (6th Cir. 1992), that “[w]e do not mean to intimate that animal studies lack scientific merit or power when it comes to predicting outcomes in humans. Animal studies often comprise the backbone of evidence indicating biological hazards, and their legal value has been recognized by federal courts and agencies.” *Id.* at 1360 (collecting cases). Dr. Goldsmith has articulated a sound basis for extrapolating conclusions for the cited studies analyzing the effect of PDs on skin—in this case mouse skin. Orkin does not suggest the existence of significant dissimilar physiological structures between the skin of mice and humans that would render the animal studies unreliable.

Relatedly, Orkin argues that the Koschier study is inapposite because it involved the application of large quantities of kerosene in high concentrations directly to lab animals’ skin five days a week for 13 weeks, which does not “fit” the facts in this case. Orkin states that the study still resulted in “no observed effect levels” for dermal toxicity and neurotoxicity at the 330 milligrams per kilogram of the animal’s body weight. ECF No. 44, PageID.421–22, citing Goldsmith Dep. 71:19–74:24, ECF No. 44-17, PageID.879–80. Orkin contends that the other studies Dr. Goldsmith reviewed similarly applied high concentrations of PDs directly and repeatedly to the skin of mice over a concentrated time period, and that Dr Goldsmith admitted that some PDs did not produce any skin irritation at all and those that did only did so when applied

directly in very high concentrations for weeks at a time. Goldsmith Dep. 78:19–79:18, 80:7–81:6, ECF No. 44-17, PageID.881. Orkin argues that Dr. Goldsmith’s opinion based on these studies is not reliable where the results are inconclusive and cannot be tied to the exact PDs or amounts of PDs to which the Thompsons were actually exposed. ECF No. 44, PageID.422, citing *Turpin*, 959 F.2d at 1358–61 (finding too great an analytical leap between the animal studies performed and the causation opinion being offered when analyzing whether certain chemicals are capable of causing birth defects).

The Thompsons respond that these criticisms go to the weight of Dr. Goldsmith’s opinions, not their admissibility, and the Court agrees. Whether the specific PDs in the animal studies vary from the exact PDs in PT Alpine goes to the weight and not admissibility of Dr. Goldsmith’s general causation opinion that exposure to PDs can cause dermal ailments. Orkin may challenge Dr. Goldsmith’s reliance on the animal studies on cross-examination to challenge whether the animal studies and other facts upon which Dr. Goldsmith relies are sufficient to support his opinions. “While [Orkin] may feel the factual bases for [Dr. Goldsmith’s] opinions are weak, that does not constitute proper grounds to exclude his testimony.” See *O’Byrne v. Weyerhaeuser Co.*, No. 2:19-cv-2493, 2022 WL 4133219, at *7 (S.D. Ohio Sept. 12, 2022) (citing *Andler v. Clear Channel Broad., Inc.*, 670 F.3d 717, 729 (6th Cir. 2012)).

Finally, Orkin's contention that Dr. Goldsmith's testimony would not suffice to prove general causation fails because whether that is true or not, what is at issue in this motion is the admissibility of the opinion, not whether such an opinion proves the disputed point. "*Daubert* does not require that an expert singlehandedly deliver plaintiffs a win on any particular legal issue, and [Goldsmith] is not the only witness who [the Thompsons] have offered on this topic." *See In re Flint Water Cases*, 2021 WL 5631706, at *3. "At summary judgment, the Court will consider whether Plaintiffs have raised a material question of fact as to the element of general causation. At this stage [of the case] the question is only whether [the expert's] opinions are sufficiently relevant and reliable to be admissible under Federal Rule of Evidence 702 and *Daubert*." *Id.*

Accordingly, Orkin's motion to exclude Dr. Goldsmith's opinion that the PDs in PT Alpine were capable of causing the dermal ailments claimed by the Thompsons in this case is denied.

c. Dr. Goldsmith's failure to consider the Thompsons' medical histories

Orkin faults Dr. Goldsmith for failing to consider the Thompsons' medical histories until after he completed his report. ECF No. 44, PageID.423–24. Orkin contends that Dr. Goldsmith therefore failed to consider the Thompsons' other diseases and conditions and to consider the epidemiology between those conditions and their reported health effects from exposure to PT Alpine. *Id.* Orkin asserts that none of the

Thompsons' medical records point to any actual dermatitis diagnosis by any of their experts. *Id.*

However, as the Thompsons and Dr. Goldsmith affirmatively state, Dr. Goldsmith is offered as a general causation expert only—that PT Alpine is capable of causing the Thompsons' claimed injuries—he is expressly not offered to provide specific causation testimony—that the Thompsons' exposure to PT Alpine in this case did cause their injuries—and thus he is precluded from offering such testimony. And again, to the extent Orkin feels that Dr. Goldsmith's general causation opinion that the PDs in PT Alpine were capable of causing the dermal ailments claimed by the Thompsons is weak, Orkin may explore that on cross-examination and argue that position to the jury.

Accordingly, Orkin's motion to exclude Dr. Goldsmith is granted in part and denied in part. Dr. Goldsmith is precluded from opining that PT Alpine is capable of causing the Thompsons' claimed depression but is permitted to opine that PT Alpine is capable of causing the Thompsons' claimed dermal ailments.

2. Dr. Christopher Weis

Dr. Christopher Weis is a toxicologist with a Doctorate in Environmental Toxicology and Physiology from Michigan State University, where he designed and completed research at the MSU Pesticide Research Center. Weis Report, ECF No. 44-15, PageID.841. He has over 41 years of experience in the application of physiology,

biophysics, and toxicology relevant to environmental exposures and effects. Dr. Weis retired from the National Institutes of Health in December of 2021. *Id.*

Dr. Weis concluded in this case that “[t]he May 31, 2018 pesticide application in the Thompsons’ home exceeded both the recommended quantity of pesticide and appropriate application procedures documented on the PT Alpine pesticide label” and that “[t]he documented over-exposure on Ardis Lee Thompson and Gloria Jean Thompson to pesticide mixtures sprayed in their home on May 31, 2018, and subsequent application of the same pesticide mixture on July [18], 2018, resulted in both acute and chronic hazards and toxicological endpoints consistent with exposures of PT Alpine[.]” *Id.* PageID.842. Dr. Weis opined that “[t]he adverse health effects described by the Thompsons, (e.g. ‘burning sensations, agitation and anxiety’) and confirmed by medical diagnoses, are consistent with the temporality and progression of peripheral and central nervous system effects expected from over-exposure to Type I pyrethroid insecticides (e.g., Prallethrin), as well as other toxins in the mixture, and are the most likely cause of the health effects described.” *Id.* Dr. Weis then concluded that “[c]onsidering the exposure evidence provided in the MDARD investigations and the health effects described by the Thompsons as recorded in their medical reports, the timing and progression of Thompsons’ health effects are consistent with excessive

exposure to the PT Alpine pesticide mixtures that were applied in their home and are a likely cause of those health effects.” *Id.* PageID.848.

Orkin does not object to Dr. Weis’s qualifications but argues that his methodology is unreliable and that he therefore cannot reliably opine that PT Alpine is capable of causing the harm alleged (general causation), much less that the Thompsons were exposed to levels of PT Alpine capable of causing their claimed symptoms (specific causation).

a. Dr. Weis’s opinion that PT Alpine is capable of causing the Thompsons’ claimed injuries

Orkin first argues that Dr. Weis cannot offer reliable general causation opinion testimony that PT Alpine is capable of causing the Thompsons’ claimed injuries in part because he has not identified a single study indicating that combining the PDs and PT Alpine’s active ingredients enhanced or increased the causative effects and are capable of causing the Thompsons’ claimed injuries. Orkin states that Dr. Weis admitted that he himself did not “go through a scientific analysis, experiment, [or] cohort study of the skin absorption of these products separately or together.” ECF No. 44, PageID.426–27, citing Weis Dep. 94:5–20, ECF No. 44-4, PageID.522. Orkin argues that Dr. Weis’s opinion therefore is improperly based on a series of assumptions that have not been tested.

Orkin further argues that the studies Dr. Weis relies on in his report (1) do not involve PT Alpine or its ingredients, (2) involve

dissimilar scenarios, and (3) specifically recognize that pyrethroids are not highly toxic to humans. ECF No. 44, PageID.427–28. Orkin continues that two of the three studies Dr. Weis cites involved suicide attempts from the oral ingestion of large amounts of pesticides containing pyrethroids, and neither case identifies the actual pyrethroid at issue, the pyrethroid’s concentration level, or the other pesticide ingredients, and thus these case studies do not “fit” the facts here. *Id.* PageID.428, citing ECF Nos. 44-20, 44-21. Orkin argues that Dr. Weis cannot “cherry-pick” data from the studies he relies on while ignoring data that undercuts his opinion. *Id.* PageID.429.

While Orkin is correct that there is no published study specifically showing that PT Alpine is capable of causing the Thompsons’ claimed injuries, this is because, as discussed above, the parties both assert that PT Alpine itself has never been tested to determine the adverse health effects that it would have on humans after repeated/chronic exposures. However, PT Alpine’s label does state that it is a “Hazard to Humans and Domestic Animals.” ECF No. 44-2, PageID.455. And as discussed above, “[t]here is no requirement that a medical expert must always cite published studies on general causation in order to reliably conclude that a particular object caused a particular illness.” *Bonner*, 259 F.3d at 929 (internal quotation omitted); *Kudabeck*, 338 F.3d at 862 (“[T]here is no requirement ‘that a medical expert must always cite published studies on general causation in order to reliably conclude that a particular object

caused a particular illness.”) (quoting *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 155 (3d Cir. 1999)).

Orkin’s criticism that Dr. Weis did not himself conduct a study analyzing the differences between skin absorption of these products separately or in combination is a non-starter. Orkin cites no requirement that a toxicologist is required to personally conduct such a study. A review of Dr. Weis’s report shows that he instead discusses the chemical mixture of “Active” and “Other” ingredients contained in PT Alpine and the toxic hazards associated with each of the three individual active ingredients as well as Petroleum Distillates and Petroleum Gases, which comprise 7–10% and 10–15% of the mixture, respectively. He explained that, based on his review of relevant scientific literature, at least four of the components of the PT Alpine mixture are known to be central nervous system toxicants—dinotefuran, prallethrin, Petroleum Distillates, and Petroleum Gases. ECF No. 44-15, PageID.844–47. Dr. Weis explained that because scientifically controlled studies in humans to assess central nervous system toxicity due to these ingredients is not possible due to ethical concerns and complexity, he looked to case reports from accidental and purposeful exposures in humans and animal studies designed to reveal neurotoxic effects of these classes of ingredients. *Id.* PageID.843. The Court find that these case reports and studies, in addition to Dr. Weis’s education, training and experience, which Orkin does not challenge, are acceptable bases for his opinions in this case. *See Hopkins*

v. Dow Corning Corp., 33 F.3d 1116, 1124–25 (9th Cir. 1994) (holding that toxicologist’s causation opinion based on “his review of medical records and Dow studies, and his general scientific knowledge of silicone’s ability to cause immune disorders as established by animal studies and biophysical data”); *Martin v. Shell Oil Co.*, 180 F. Supp. 2d 313, 320 (D. Conn. 2002) (finding toxicologist’s opinion, based on his expertise and knowledge of toxicology, published materials in the field, and temporal associations that chemical contamination caused plaintiff’s injuries admissible); *Ford v. Carnival Corp.*, No. 08-23451-CIV, 2010 WL 9116184, at *2 (S.D. Fla. Mar. 4, 2010) (holding that toxicologist was competent to testify based on his review of medical records and his general scientific knowledge of the required concentration of chlorine gas necessary to cause adverse physical effects).

Orkin also argues that the studies on which Dr. Weis relies involve dissimilar scenarios and/or fail to identify the actual pyrethroid at issue. However, the studies Dr. Weis cites to and relies on, including peer-reviewed animal and human studies, demonstrates the mechanisms by which exposure to the categories of ingredients in PT Alpine can cause dermal harm. Based on his experience, the peer-reviewed animal and human studies, and the published literature, Dr. Weis can “reliably argue” that exposure to PT Alpine is capable of causing the dermal ailments the Thompsons complain of in this case. The Court concludes that the cited studies, in combination with Dr. Weis’s education and

experience, weigh in favor of admissibility of his opinions. A challenge to the factual bases for an expert's testimony generally goes to the weight of the testimony, not to its admissibility. *Elosu v. Middlefork Ranch Inc.*, 26 F.4th 1017, 1024 (9th Cir. 2022). Thus, to the extent Orkin believes the studies cited by Dr. Weis are insufficient to support his ultimate opinion about causation, Orkin is free to cross-examine Dr. Weis accordingly.

b. Dr. Weis's reference to the MSDS for PT Alpine

Orkin argues that Dr. Weis cannot rely on the PT Alpine MSDS "to prove general causation." ECF No. 44, PageID.429–32. This argument can be readily rejected. First, as discussed above, Dr. Weis is not required to "prove" causation. That is an issue for summary judgment. Instead, the Court's inquiry here is whether Dr. Weis's opinions pass muster under Rule 702 and *Daubert*.

Second, Dr. Weis did not "blindly rel[y] upon PT Alpine's MSDS" and did not consider the MSDS as the sole basis for his opinion on causation. Dr. Weis instead properly considered the MSDS for PT Alpine and PT Alpine's product label to identify the "Active" and "Other" ingredients of PT Alpine, and the amount of each ingredient. Dr. Weis then considered PT Alpine and its constituent chemicals along with his extensive education, training, and experience in toxicology, case reports, peer-reviewed studies, the Thompsons' testimony, and their medical records in reaching his opinions in this case. *See Best*, 563 F.3d at 181

(expert reliably “concluded from the MSDS sheet and his own knowledge of medicine and chemistry that the chemical it contains can cause damage to the nasal and sinus mucosa upon inhalation”); *McCulloch v. H.B. Fuller Co.*, 61 F.3d 1038, 1044 (2d Cir. 1995) (admitting doctor’s testimony based on the doctor’s “review of [the] MSDS” and his “training and experience”).

Accordingly, the Court finds that Dr. Weis’s reference to the MSDS for PT Alpine in his report does render his testimony unreliable.

c. Whether Dr. Weis’s opinion must be based on the exact dose of PT Alpine to which the Thompsons were exposed

Dr. Weis states in his report that “[a] central premise of toxicology is that ‘*the dose makes the poison.*’” ECF No. 44-15, PageID.847. However, he admits that he only has a “general opinion” regarding the dose of PT Alpine the Thompsons were exposed to, that he “didn’t calculate a dose,” he “ha[s] no basis for determining what amount of mixture the Thompsons were exposed to on the scene,” and he instead “generalize[d] and qualitatively assume[d] that there is some level of exposure to the Thompsons.” Weis Dep. 109:15–16, 114:22–116:7, 130:8–11, ECF No. 44-4, PageID.525, 527, 531. Dr. Weis testified that there is not enough data available from the technical reports to quantify the Thompsons’ exposure. *Id.* 114:15–17, PageID.527. Dr. Weis thus explains that he used a “qualitative risk assessment” instead to assess the Thompsons’ exposure, which he testified is within the bounds of his practice. *Id.* 21:8–

12, PageID.503. He based this assessment on his experience as a toxicologist, his review of the literature, the application of the PT Alpine in the Thompsons' home, the lack of quantitative records, and the Thompsons' testimony and medical records. *Id.* PageID.21:24–24:3, 45:5–17, PageID.503–04, 509.

Orkin argues that Dr. Weis's failure to calculate the dose is fatal to his general and specific causation opinions. Orkin states that Dr. Weis stated it only "appears as if the ... application [of PT Alpine] would have resulted in an overexposure," Weis Dep. 70:9–13, ECF No. 44-4, PageID.516, rendering his opinion mere speculation. ECF No. 44, PageID.432–33. Orkin asserts that Dr. Weis's claimed inability to calculate the Thompsons' exposure is belied by MDARD's calculations for the May 31st application, MDARD Report ¶ 10, ECF No. 44-13, PageID.825 (determining that Orkin applied 3 ounces of PT Alpine to 210 square foot bedroom), and Orkin's expert's calculation which determined that the margin of exposure ("MOE") for one of PT Alpine's active ingredients, prallethrin, for the May 31st application was 1.88x. Weidling Report, ECF No. 44-26, PageID.996.⁷ Orkin's human risk assessment expert Ryan Weidling further calculated that even using three cans of PT

⁷ "Margin of exposure (MOE) is the ratio of no-observed-adverse-effect level (NOAEL) obtained from animal toxicology studies to the predicted, or estimated human exposure level or dose." https://www.chemsafetypro.com/Topics/CRA/margin_of_safety_MOS_margin_of_exposure_MOE_difference_chemical_risk_assessment.html.

Alpine in the Thompsons' bedroom alone would not have resulted in an unacceptable MOE. *See id.* Orkin asserts that Dr. Weis could have calculated a worst case scenario, *i.e.*, use of 3 cans on May 31st and 1 can on July 18th, but failed to do so. He therefore failed to show that the Thompsons' potential exposure exceeded safe levels. Orkin argues that Dr. Weis's failure to attempt to calculate the amount of PT Alpine to which the Thompsons were exposed is the "ultimate death knell" to his opinion in this case.

The Thompsons respond that this argument lacks merit because Dr. Weis's inability to quantify the Thompsons' exposure is because Orkin did not keep accurate records of how much pesticide was applied to each of the rooms in the Thompsons' home on both dates. The Thompsons argue that Orkin's records from the May 31st and July 18th applications of PT Alpine in their home were admittedly "falsified and/or altered by Orkin and are therefore completely unreliable." ECF No. 46, PageID.1242–44. Specifically, the Orkin technician applying the pesticide in the Thompsons' home on May 31st testified that the quantity "3" on the service ticket is not accurate and that the actual amount applied was likely less. Hutchinson Dep. 58:2–59:23, ECF No. 44-7, PageID.595. The July 18th service ticket lists a quantity of "1", but the technician applying the PT Alpine that day stated he applied $\frac{1}{4}$ of a can (a can is 20 ounces) to all the rooms. MDARD Report, ECF No. 44-13, PageID.823. That technician, Baker, further testified that he cannot tell,

from looking at the service ticket, how much pesticide was sprayed in each room, Baker Dep. 96:9–97:10, ECF No. 44-10, PageID.721–22, thus he could have oversprayed in some rooms and undersprayed in others. Further, Orkin’s risk assessment expert, Weidling, admitted that he does not know the MOE for PT Alpine as a whole, but only assessed it for its active ingredients. Weidling Dep. 54:7–55:10 (admitting he does not know the MOE for the petroleum distillates or petroleum gases in PT Alpine), ECF No. 44-25, PageID.968.

The Sixth Circuit has recognized that evidence of the precise level of chemical exposure is not necessary when other evidence supports the claim. *See Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 265 (6th Cir. 2001). In toxic tort cases, the plaintiff need not “produce a ‘mathematically precise table equating levels of exposure with levels harm,’” *Bednar v. Bassett Furniture Mfg. Co.*, 147 F.3d 737, 740 (8th Cir. 1998) (quoting *Wright v. Willamette Indus., Inc.*, 91 F.3d 1106 1107 (8th Cir. 1996)), for “a plaintiff need only make a threshold showing that he or she was exposed to toxic levels known to cause the type of injuries he or she suffered.” *Mattis v. Carlon Elec. Prods.*, 295 F.3d 856, 860–61 (8th Cir. 2002); *National Bank of Commerce v. Associated Milk Producers, Inc.*, 191 F.3d 858, 862 (8th Cir.1999).

In *O’Byrne v. Weyerhaeuser Co.*, the plaintiffs complained they were exposed to formaldehyde fumes while living in their homes for between 51 and 159 days before evacuating. 2022 WL 4133219, at *3 (S.D. Ohio

Sept. 12, 2022). The plaintiffs offered a medical toxicologist for both general and specific causation to opine that inhalation formaldehyde exposure was capable of causing the plaintiffs' symptoms including eye irritation, airway irritation, headaches, and nausea, and did cause those symptoms. *Id.* The expert relied on peer reviewed studies, data from regulatory bodies, the plaintiffs' self-reported symptoms, and his experience to opine as to general and specific causation. *Id.* at *10. The defendant claimed that the expert failed to establish an exact quantifying dose-exposure for each plaintiff. The district court rejected that argument and stated that "[t]he Sixth Circuit has made clear that *Daubert* does no[t] require 'precise' or 'exact' information concerning dosage or the dose-response relationship." *Id.* (citations omitted). The court noted that there was "little evidence in the record on the levels of formaldehyde in Plaintiffs' homes prior to remediation," and thus found that the expert's opinions "have a reasonable factual basis." *Id.* at *11 (stating that defendant's dispute of the strength of those facts is best resolved through cross-examination). *See also Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 264 (4th Cir. 1999) ("[W]hile precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff's exposure are beneficial, such evidence is not always available, or necessary, to demonstrate that a substance is toxic to humans given substantial exposure and need not invariably provide the basis for an expert's opinion on causation.") (citing *Heller*, 167 F.3d

at 157, noting “that even absent hard evidence of the level of exposure to the chemical in question, a medical expert could offer an opinion that the chemical caused plaintiff’s illness.”)).

The Court concludes that Dr. Weis’s causation opinion, based on his education, training and experience in toxicology, case reports, studies, the Thompsons’ testimony and their medical records, the temporal relationship between the Thompsons’ exposure and claimed symptoms, and Orkin’s failure to keep accurate records of the applications of PT Alpine to the Thompsons’ home, is sufficiently relevant and reliable to be admissible under Rule 702 and *Daubert*. “[C]ompeting expert opinions [between Dr. Weis’s opinion and Orkin’s expert’s opinion] present the ‘classic battle of the experts’ and it [is] up to the jury to evaluate what weight and credibility each expert opinion deserves.” *Phillips v. Cohen*, 400 F.3d 388, 399 (6th Cir. 2005). The Court will consider at summary judgment whether the Thompsons have raised a material question of fact as to the element of causation.

d. Whether Dr. Weis can testify about the medical cause of the Thompsons’ symptoms

Finally, Orkin argues that Dr. Weis cannot testify that the Thompsons’ reported symptoms were “most likely cause[d]” by “over-exposure to Type I pyrethroid insecticides (e.g. Prallethrin), as well as other toxins in the mixture” in PT Alpine, *see* Weis Report at 4 ¶ 4, ECF No. 44-15, PageID.842, because Dr. Weis is not qualified to give a medical

diagnosis. He is not a medical doctor, and he did not conduct a differential diagnosis. Weis Dep. 21:22–23, 186:14–17, 187:4–21 (admitting he is not qualified to perform a differential diagnosis because he is not a physician), ECF No. 44-4, PageID.503, 545. A differential diagnosis is “[t]he method by which a physician determines what disease process caused a patient’s symptoms.” *Kolestar v. United Agri. Prod., Inc.*, 246 F. App’x 977, 980 (6th Cir. 2007). The physician “considers all relevant potential causes of the symptoms and then eliminates alternative causes based on a physical examination, clinical tests, and a thorough case history.” *Id.* Orkin argues that Dr. Weis therefore should be precluded from testifying as to the medical cause of the Thompsons’ symptoms. ECF No. 44, PageID.439–41 (citing *In re Dow Corning Corp.*, 541 B.R. at 653 (holding expert cannot be qualified to testify as to general or specific causation because he is not a medical doctor and he cannot testify that the silicone gel caused plaintiff’s diseases); *Conde v. Velsicol Chem. Corp.*, 24 F.3d 809, 813 (6th Cir. 1995) (experts are non-medical doctors unqualified to render differential diagnoses of medical conditions); *Plourde v. Gladstone*, 69 F. App’x 485, 487 (2d Cir. 2003) (toxicologist was not properly qualified to offer a medical diagnosis using the method of differential diagnosis)).

The Thompsons respond that other courts have allowed toxicologists to testify about causation of symptoms. ECF No. 46, PageID.1247, citing *Martin*, 180 F. Supp. 2d at 320; *Hopkins v. Dow*

Corning Corp., 33 F.3d 1116, 1124 (9th Cir. 1994). In *Hopkins*, the court held that the toxicologist expert's opinion as to the causal connection between the plaintiff's implants and the disease from which she suffered, based on his experience as a toxicologist, his review of medical records and studies, and his general scientific knowledge of silicone's ability to cause immune disorders as established by animal studies and biophysical data, was admissible. 33. F.3d at 1124–25. In *Martin*, the court held that the toxicology expert could testify as to specific causation, without conducting a differential diagnosis, because his opinion is based on “his expertise and knowledge of toxicology, published materials in the field, and temporal association as the basis for his opinion that MTBE contamination caused plaintiffs' injuries.” 180 F. Supp. 2d at 320. The court found that the cases requiring “a differential diagnosis and ignoring temporal association are distinguishable and often involved egregious instances of unqualified experts or wildly aberrant theories in a particular field,” and that any arguments to the contrary “only affect the weight, not admissibility of [the expert's] testimony.” *Id.*

The Court concludes that Dr. Weis is qualified, based on his education, extensive experience, review of peer reviewed literature, and the Thompsons' testimony and medical records to opine that the Thompsons' claimed symptoms, which they testify occurred immediately after returning from the July 18, 2018 PT Alpine application, were caused by their exposure to PT Alpine. Orkin's arguments as to the

factual bases for Dr. Weis's opinion go to the weight not admissibility of this opinion.

Accordingly, Orkin's motion to exclude Dr. Weis's testimony and opinions is denied.

3. Dr. Gerald Shiener

Dr. Gerald Shiener, M.D., is a psychiatrist, Diplomat of the American Board of Psychiatry and Neurology, Chief of Psychiatry at Sinai Grace Hospital of Detroit, and Professor of Psychiatry and Behavioral Neurosciences at Wayne State University School of Medicine. He conducted a virtual psychiatric evaluation of Plaintiffs Gloria Jean Thompson and Artis Lee Thompson on March 15, 2021 at the request of the Thompsons' counsel. Shiener Report at 1, ECF No. 44-16, PageID.850; Shiener Dep. 14:19–15:23, ECF No. 44-28, PageID.1035. During this approximately four-hour interview, the Thompsons self-reported their personal and medical histories and described the events in this case. ECF No. 44-16, PageID.850–52, 855–57.

Dr. Shiener diagnosed Mrs. Thompson with "Posttraumatic Stress Disorder with secondary depression" and "Minor cognitive disorder, benign forgetfulness of aging." *Id.* PageID.853–54. He opines that:

Being taken by surprise and being unprepared for a dermatologic reaction to a chemical exposure was traumatic to Mrs. Thompson, and as such has set up a persistent syndrome of painful burning in her skin, preoccupation with the circumstances of her injury, phobic avoidance of further exposure, and an emotional decompensation with depressive

symptomatology, reliving this experience through nightmares and ruminative thoughts, becoming irritable and socially withdrawn.

A careful review of her psychosocial history reveals no other factors capable of causing a pattern of decompensation of this nature other than a reaction to a chemical exposure such as she describes, and her symptoms are consistent with that formulation.

Id. PageID.854–55.

Dr. Shiener diagnosed Mr. Thompson with “Posttraumatic Stress Disorder with secondary depression” and “Mild neurocognitive disorder.”

Id. PageID.858. Dr. Shiener opined that:

This chemical exposure and his wife’s illness represented a sudden emotional event which caught the patient by surprise, put him in a position for which he was not prepared, and brought up feelings of intense helplessness and powerlessness, and he has been struggling with the effects of that event since that time.

A careful review of his psychosocial history reveals no factors capable of causing a pattern of decompensation of this type other than a reaction to a chemical exposure such as he described, and his symptoms are consistent with that formulation.

Id. at 859.

As with the Thompsons’ other experts, Orkin does not challenge Dr. Shiener’s qualifications. Instead, Orkin challenges the factual and methodological bases for Dr. Shiener’s conclusions. Orkin contends that

Dr. Shiener admits that before rendering his opinions in this case, he did not review any of the Thompsons' medical records and he did not consult with the Thompsons' treating physicians, and that he did not interact with the Thompsons again after the single virtual interview. Shiener Dep. 18:24–19:4, 21:13–22:4, 168:9–14 ECF No. 44-28, PageID.1036–37, 1073. Dr. Shiener also did not review any information related to PT Alpine or Orkin's treatment records of the Thompsons' home. *Id.* 24:18–25:18, PageID.1037. Orkin argues that, as a result, Dr. Shiener's opinions are not based on sufficient facts or data and should be excluded.

“[A]n expert's opinion must be supported by ‘more than subjective belief and unsupported speculation’ and should be supported by ‘good grounds,’ based on what is known.” *McLean v. 988011 Ontario, Ltd.*, 224 F.3d 797, 800–01 (6th Cir. 2000) (quoting *Pomella v. Regency Coach Lines, Ltd.*, 899 F. Supp. 335, 342 (E.D. Mich. 1995)). Accordingly, “whe[n] based on assumed facts, [an expert's opinion] must find some support for those assumptions in the record.” *Id.* (citing *Shaw ex rel. Strain v. Strackhouse*, 920 F.2d 1135, 1142 (3d Cir. 1990)).

Courts have excluded an expert's opinion based only on a plaintiff's self-reports without a review of the relevant medical records. *See Madej v. Maiden*, 951 F.3d 364, 375–76 (6th Cir. 2020) (affirming exclusion of doctors' opinions that certain chemicals caused plaintiff's harmful reactions based only on the plaintiff's self-reporting concerning her sensitivities); *Nusbaum v. Enlighten Family Chiropractic, LLC*, No. 19-

cv-10223, 2023 WL 319782, at *13 (E.D. Mich. Jan. 19, 2023) (Drain, J.) (partially excluding Dr. Shiener’s opinion “that [the chiropractor] used enough force during chiropractic manipulation to tear Plaintiff’s vertebral artery or that she caused Plaintiff’s symptoms” that was based on the plaintiff’s self-reporting and without examination of medical records or testing and without consideration of the plaintiff’s other activities that could have traumatized her vertebral artery) (citing *Pluck*, 640 F.3d at 678 (rejecting medical-causation testimony where expert failed to “rule out” alternative causes)); *Amerson v. Stechly*, No. 12-10375, 2015 WL 6436341, at * 2 (E.D. Mich. Oct. 22, 2015) (Tarnow, J.) (excluding doctor’s opinion that a “kick to the head” caused plaintiff’s seizures based on doctor’s practice to “automatically believe patients’ self-reports [that ‘his seizures started after such trauma occurred’] rather than evaluating their credibility” and without “review[ing] any preexisting medical records concerning Plaintiff.”); *see also In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 762 (3d Cir. 1994) (“Thus, we are satisfied that where Drs. DiGregorio or Sherman based their conclusion as to a plaintiff’s symptoms solely on the plaintiff’s self-report of illness in preparation for litigation, the district court acted within its discretion in excluding the testimony as based on an unreliable source of information.”).

In their Response, the Thompsons cite to a single case, *Kaiser v. Jayco, Inc.*, No. 1:20-cv-12903, 2022 WL 856155, *5 (E.D. Mich. Mar. 22,

2022) (Ludington, J.), for the proposition that “a physician can obtain a thorough medical history as required for differential diagnosis without reviewing irrelevant records.” However, in *Kaiser*, the defendant failed to explain why the unreviewed medical records were relevant to Dr. Shiener’s differential diagnosis of the plaintiff with PTSD. *Id.* at *5. In this case, Orkin explains that Mrs. Thompson’s medical records predating the May 31st initial treatment of her home with PT Alpine detail several serious medical conditions that Dr. Shiener never considered, including that she was diagnosed with rheumatoid arthritis (“RA”) at least ten years ago, she has a history of urinary tract infections, and she was diagnosed with anxiety as early as February 2013. *See* Shiener Dep. 110:15–25, 115:17–22, 118:20–119:23, ECF No. 44-28, PageID.1059–61. Dr. Shiener admitted that RA and urinary tract infections can cause mental health problems, cognitive decline, and psychological disorders. *Id.* 110:22–25, 116:3–117:1, PageID.1059–60. In addition, Dr. Shiener was unaware that Mrs. Thompson had been confined to a wheelchair since 2012 and bedbound since a gallbladder surgery in November 2019. *Id.* 124:15–22, 130:3–15, PageID.1062, 1064. Dr. Shiener was also unaware of Mr. Thompson’s medical issues of pre-diabetes, numbness, and pain in his feet predating the first May 31st PT Alpine treatment of his home. *Id.* 136:25–137:10, 148:9–13, PageID.1065, 1068. Thus, Dr. Shiener failed to consider the Thompsons’ relevant medical conditions predating the first application of PT Alpine in their

home before opining that their complained of symptoms were attributable to their PT Alpine exposure.⁸

Based on the above, the Court grants in part and denies in part Orkin's motion to exclude Dr. Shiener. The Court finds that Dr. Shiener can opine as to his diagnoses of the Thompsons based on his March 15, 2021 virtual examination of posttraumatic stress disorder with secondary depression. However, he cannot offer an opinion that those diagnoses were caused by the Thompsons' exposure to PT Alpine because such an opinion is unreliable and not based on sufficient data. Dr. Shiener failed to take into consideration and explain the possible impact of the Thompsons' relevant medical history and whether there could be other causes of the Thompsons' mental conditions. *See Pluck*, 640 F.3d at 678 (rejecting medical causation testimony where expert failed to "rule out" alternative causes).

B. Plaintiffs' Motion to Exclude Defendant's Experts (ECF No. 45)

The Thompsons moved to exclude the testimony, opinions, and reports of Orkin's four experts: (1) Dr. Jeffrey Parker (M.D.), (2) Ryan

⁸ Orkin also faults Dr. Shiener for not utilizing the criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as a checklist when diagnosing the Thompsons. Dr. Shiener testified that the DSM-5 is "a guideline ... not a checklist[.]" Shiener Dep. 37:16–25, 56:10–15, ECF No. 44-28, PageID.1040, 1045. The Court finds that Dr. Shiener's deviation from the DSM-5 goes to the weight of his testimony and can be explored on cross-examination. *See Kaiser*, 2022 WL 856155, at *6.

Weidling (M.P.H., human risk assessment), (3) Elaine Freeman (M.S., pharmacology/toxicology), and (4) Dr. Shamarial Roberson (D.Ph., M.P.H., epidemiology).

1. Dr. Jeffrey Parker

Orkin retained Dr. Jeffrey Parker to perform an independent medical evaluation (“IME”) of the Thompsons. Dr. Parker is a board-certified physician in internal medicine and pulmonary medicine. Parker Dep. 6:19–7:1, ECF No. 47-2, PageID.1354. He physically examined Mr. and Mrs. Thompson at their home on November 12, 2022. He also reviewed their medical records, took medical and social histories from them, and reviewed expert reports and other case documents. ECF No. 47-2, PageID.1569–86. Dr. Parker opines, to a reasonable degree of medical certainty, as to both Mr. and Mrs. Thompson, that “the diagnosis in this case is no diagnosis established secondary to the alleged exposure” to PT Alpine. *Id.* PageID.1573, 1584.

The Thompsons argue that Dr. Parker’s opinions should be excluded because he “has no specialized knowledge of the chemicals in the pesticide at issue” and “did not know the adverse effects of the chemicals found in PT Alpine,” and thus “had no idea what to look for during the examinations.” ECF No. 45, PageID.1111. However, as Orkin explains, it engaged Dr. Parker to evaluate and testify as to the Thompsons’ claimed injuries and damages—namely, their claimed physical injuries of “rash, burning sensation, skin irritation, severe

dermatitis, tingling in toes,” and that they suffered additional damages of “pain and suffering, mental anguish/distress.” ECF No. 47, PageID.1340, citing ECF No. 47-2, PageID.1561. Dr. Parker is a physician retained to perform IMEs of the Thompsons and render a diagnosis in light of their claimed symptoms. He is not a toxicologist or epidemiologist and has not been retained to offer testimony regarding chemical exposure or the properties of PT Alpine.

The Court finds that Dr. Parker reliably applied the principles and methods of an independent medical examiner to the facts of the case because, as he explained, his opinions are based upon the Thompsons’ subjective complaints, the history given by each of them, the objective medical records and tests provided to him, and his findings upon physical examination of the Thompsons, an accepted methodology for experts performing independent medical examinations. *See* Fed. R. Evid. 702; *cf. In re Flint Water Cases*, 2021 WL 5769168, at *1 (admitting testimony of psychologist who examined and interviewed plaintiffs and reviewed their medical records); *Johnson v. Lopez-Garcia*, No. 20-2024, 2021 WL 3637785, at *3 (E.D. La. Aug. 17, 2021) (admitting testimony by physician who personally examined the plaintiffs, reviewed their medical records, considered the plaintiffs’ personal assessments of their symptoms, and utilized his years of medical education, training, and experience to reach his conclusion). The Thompsons may examine any claimed weaknesses in Dr. Parker’s opinions through cross examination.

The Thompsons also argue that Dr. Parker's opinions should be excluded as unhelpful to the trier of fact because he "made no determination of the cause of the Thompsons' symptoms and has no specialized knowledge of the chemicals (or their adverse effects)." ECF No. 45, PageID.1111. Again, the Thompsons misunderstand Dr. Parker's opinions. He listed several objectively supported diagnoses and symptoms for Mr. and Mrs. Thompson, but states that he found no objective evidence to support the existence of the Thompsons' reported health effects from chemical exposure, stating "the diagnosis in this case is no diagnosis established secondary to the alleged exposure." ECF No. 47-2, PageID.1573–74, 1585. He then stated that he did not reach a conclusion on causation *because he found no objective support for the Thompsons' claimed symptoms*, stating "[i]f there is no medical dysfunction, there is no causation." *Id.* ("Since I found no objective evidence of the claimant's allegations (physical dysfunction), I found causation, or the search for causation to be of no probative value."). Dr. Parker based this conclusion on his physical examination of the Thompsons and his review of their medical records, an accepted and reasonable methodology. *See Johnson*, 2021 WL 3637785 at *3. His opinions can be explored on cross-examination.

The Court finds that Dr. Parker will be allowed to testify as to his opinion that "the diagnosis in this case is no diagnosis established secondary to the alleged exposure." ECF No. 47-2, PageID.1573–74, 1585.

His opinions were not reached by his ipse dixit alone, but rather through evaluation of objective medical records and his own physical examination of Mr. and Mrs. Thompson. Accordingly, the Court denies the Thompsons' Motion to Exclude the testimony of Dr. Parker.

2. Ryan Weidling

Ryan Weidling is a Managing Scientist with Exponent in its Center for Chemical Regulation and Food Safety. He has a Master of Public Health degree in Environmental Health Science from the University of California at Berkley and a Bachelor of Science degree in Biology (Ecology and Evolution) from the University of California at Santa Cruz. ECF No. 44-26, PageID.980. He specializes in human health occupational, residential, and dietary exposure and risk assessments for clients. *Id.* Weidling was asked to opine as to the “potential risk resulting from [post-application] exposure to the pesticide active ingredients contained in PT Alpine[],” dinotefuran, pyriproxyfen, and prallethrin. *Id.* at PageID.981, 986. Weidling concludes that, even assuming that Orkin applied five cans of PT Alpine to only the Thompsons' 210 square-foot bedroom, that still would not have resulted in a harmful exposure to the Thompsons. ECF No. 44-27, PageID.1027–28. He opined that “it is unreasonable to conclude that the symptoms Gloria Thompson and Ardis Thompson reported are attributable to PT Alpine within a reasonable degree of scientific certainty and based on [his] education[,] training and experience.” *Id.* PageID.1028.

The Thompsons first fault Weidling, who is admittedly not a toxicologist, for relying on other experts to provide him with toxicological information. However, because Weidling is not a toxicologist, it was reasonable and acceptable for him to rely on the toxicological assessment performed by Elaine Freeman, Orkin's retained toxicology expert. "An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed." Fed. R. Evid. 703.; *see also Counts v. General Motors, LLC*, 606 F. Supp. 3d 547, 587 (E.D. Mich. 2022) (Ludington, J.) ("Far from *ipse dixit*, basing an expert opinion on another expert's opinion reflects sound judgment."); *Craton v. Birds Eye Foods, Inc.*, No. 1:10-CV-541, 2013 WL 12421822, at *10 (W.D. Mich. Dec. 20, 2013) (noting that experts "can base their opinions in part on facts, data, conclusions, or opinions from other experts").

The Thompsons further fault Weidling for restricting his assessment to the three active ingredients in PT Alpine and for not performing an assessment of the petroleum distillates or petroleum gases that make up 7–10% and 10–15% of PT Alpine, respectively, and not assessing how the chemicals in PT Alpine interact with each other. The Thompsons assert that PT Alpine's label cautions that these inactive (or inert) ingredients are still harmful to humans and that the EPA states "the name 'inert' does not mean non-toxic." ECF No. 45, PageID.1112–13.

Weidling explained that it is generally accepted by the EPA to focus on the active ingredients in a pesticide because "that's what's producing

your pesticidal effects” and “because the individual active ingredients are assumed to be driving all of the toxicity.” Weidling Dep. 25:20–26:10, ECF No. 44-25, PageID.961. Weidling stated that he made this assessment “[b]ecause of how the EPA is assessing and treating the product.” *Id.* 25:20–26:10, 29:24–31:5, 52:16–53:6, PageID.961–62, 967–68. He explained that if the EPA or other regulatory agencies assessing PT Alpine had noted how “the chemicals interact with each other,” he would have considered that, but they did not. *Id.* 32:8–24, PageID.962.

The Thompsons have failed to show that Weidling’s methodology as applied in his field of expertise is unreliable or inappropriately applied to the facts of this case. Instead, the Thompsons’ complaints go to the factual sufficiency or scope of Weidling’s opinion and may be explored on cross-examination. *See Innovation Ventures, LLC v. Custom Nutrition Labs, LLC*, 520 F. Supp. 3d 872, 888 (E.D. Mich. 2021) (stating that “much of Plaintiff’s argument focuses on the factual sufficiency of [the expert’s] analysis, which, again, goes to its weight, not admissibility”) (citing *In re Scrap Metal*, 527 F.3d at 530). “Sixth Circuit case law states that expert testimony is reliable for the purposes of assessing admissibility even if the analysis relies on factually erroneous premises so long as the principles of the analysis itself were correctly applied.” *Id.* (citing *In re Scrap Metal*, 527 F.3d at 530).

Next, the Thompsons argue that Weidling improperly limited his risk assessment to the Thompsons’ bedroom, even though the pesticide

was also applied in the kitchen, bathroom, and living room of their home. However, as Orkin responds, the Thompsons miss the import of Weidling's opinion and calculations, wherein he assumed a "worst-case scenario." Weidling opined that even assuming Orkin applied **five cans** of PT Alpine only to the Thompsons' 210 square foot bedroom, such an amount would still not have resulted in a harmful exposure to the Thompsons. ECF No. 44-27, PageID.1027–28 (finding that the total exposure to this one room fell within the Margin of Exposure ("MOE")). As Weidling explained, "that is a risk assessment exposure assessment way to evaluate things" and "by focusing on the worst-case exposure and assuming someone's always getting it from whatever room that is, you are actually covering the other rooms." Weidling Dep. 46:13–49:21, ECF No. 44-25, PageID.966–67. The Thompsons have failed to demonstrate that this methodology is faulty or unreliable.

Finally, the Thompsons seek to exclude Weidling for not conducting a dietary exposure assessment, even though the pesticide was applied in the Thompsons' kitchen. Weidling stated in his report that, based on the application of PT Alpine to the flooring of the Thompsons' home through the crack-and-crevice and broadcast methods, he only considered post-application exposure to the Thompsons through dermal and inhalation routes of exposure. ECF No. 44-26, PageID.983, 985. He explained that "[i]ncidental oral exposures were not considered as persons exposed were adults and incidental exposures are specific only to children 1 < 2 years

old.” *Id.* PageID.983. The Thompsons’ complaints regarding the sufficiency of the factual bases for Weidling’s assumptions can be addressed on cross-examination but are do not operate to exclude his opinion. *See In re Scrap Metal*, 527 F.3d at 530; *Andler*, 670 F.3d at 729 (clarifying that “it is not proper for the Court to exclude expert testimony ‘merely because the factual bases for an expert’s opinion are weak.’”).

Accordingly, the Thompsons’ motion to exclude Weidling as an expert witness will be denied.

3. Elaine Freeman

Elaine Freeman is a Managing Scientist with Exponent, Inc. She has a Master of Science in Microbiology from the University of Pittsburgh and is a Diplomat of the American Board of Toxicology (DABT) since 2006. She has been employed with Exponent since 2011 and has worked as a toxicologist in the chemical and pesticide industries since 1998, focusing on Regulatory Toxicology. ECF No. 44-3, PageID.463. Freeman was asked to opine as to the potential human health effects resulting from acute to subchronic (1–30 days) exposure to the components contained in PT Alpine. *Id.* PageID.464. She concluded that the three active ingredients and the inert ingredients in PT Alpine do not pose an unreasonable risk to human health and that “[o]verall, there is no potential based on the acute toxicity studies conducted with PT Alpine [] to result in acute toxicity via oral, dermal, or inhalation routes of

exposure, no potential for eye or skin irritation, and no potential for skin sensitization.” *Id.* PageID.495.

The Thompsons argue that Freeman incorrectly assumed that PT Alpine was applied in their home according to the label’s instructions. Freeman properly noted in her report that “[t]he exposure under consideration resulted from the application of PT Alpine ... by a professional applicator on May 31, 2018 and on July 18, 2018,” and that the “residents were advised against re-entry during this 4-hour time period” after the application, as specified on the label. ECF No. 44–33, PageID.466, 471. However, Freeman explained in her deposition that she did not calculate the level of the Thompsons’ exposure and instead relied on Weidling to make those calculations, as those are within his area of expertise. Freeman Dep. 19:10–13, 72:13–73:10, ECF No. 47-2, PageID.1503, 1516–17. *See Counts*, 606 F. Supp. 3d at 587; *Craton*, 2013 WL 12421822, at *10. And arguments about the factual sufficiency of an expert opinion or analysis goes to the weight of the evidence, not its admissibility. *In re Scrap Metal*, 527 F.3d at 523.⁹

⁹ In support of their argument that Defendant significantly over-sprayed pesticide in their home in May and July 2018, Plaintiffs include a table in their motion purportedly showing the “minimum amount of over-spraying” of PT Alpine based solely on each room’s square footage as calculated by a third party, ServePro. ECF No. 45, PageID.1110. The Court will not consider this attorney-created table containing counsel’s own calculations in assessing this motion to exclude Defendant’s experts.

The Thompsons next seek to exclude Freeman's opinion testimony, arguing that she assumed the Thompsons were only exposed to PT Alpine on May 31 and July 18, 2018, but she failed to assess post-application exposures beyond those two dates. This is incorrect. Freeman states in her report that she considered "post-application residential exposures of acute to short-term duration (up to 30 days), following a 4-hour period from the time of application." ECF No. 44-3, PageID.471, 482, 494. Freeman concluded that "[o]verall, there is no potential based on the acute toxicity studies conducted with PT Alpine to result in acute toxicity via oral, dermal, or inhalation routes of exposure, no potential for eye or skin irritation, and no potential for skin sensitization." *Id.* PageID.482, 495. Further, as discussed above, Orkin retained Weidling to calculate and assess the Thompsons' "post-treatment" exposure rates, and it was not unreliable for Freeman to rely on Weidling's opinions within his area of expertise. *See Counts*, 606 F. Supp. 3d at 587. And as stated above, the Thompsons' challenges to the factual sufficiency of Freeman's opinions go to the weight, not admissibility, of that evidence. *In re Scrap Metal*, 527 F.3d at 530. "[R]ejection of expert testimony is the exception, rather than the rule." *In re Scrap Metal*, 527 F.3d at 530. Testimony based on allegedly erroneous facts will generally be permitted "when there is some support for those facts in the record." *Id.*

Finally, the Thompsons contend that Freeman, like Weidling, limited her analysis to 0.4% of the chemicals found in PT Alpine, and

“offered no justification for ignoring the remaining 99.6% of the chemicals in the pesticide.” ECF No. 45, PageID.1115. This is not accurate. Freeman details in her report that she assessed the three active ingredients in PT Alpine and the inactive or inert ingredients. ECF No. 44-3, PageID.471–82. Freeman also reviewed the EPA toxicological data and studies for PT Alpine as an end-use product, which combined the active and inert ingredients, and assessed PT Alpine as an end-use product. *Id.*; Freeman Dep. 44:25–45:19, ECF No. 47-2, PageID.1509–10. Freeman explains in her report that the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) governs the registration, distribution, sale, and use of pesticides in the United States and requires the submission of toxicology data including “acute toxicity, ... toxicokinetic, repeated dose toxicity, reproductive and developmental toxicity, chronic toxicity and carcinogenicity, genotoxicity, neurotoxicity, and immunotoxicity.” ECF No. 44-3, PageID.468. Freeman explains that “[b]oth active ingredients and inert ingredients are assessed by the EPA to ensure their use will not cause unreasonable adverse effects to humans or the environment.” *Id.* PageID.469. Freeman further reviewed and assessed the underlying studies that the manufacturer of PT Alpine submitted to the EPA. Freeman Dep. 53:3–54:3, ECF No. 47-2, PageID.1512. Therefore, the Thompsons’ argument that Freeman only performed a toxicological assessment of 0.4% of the ingredients in PT Alpine is incorrect.

For these reasons, the Thompsons' motion to exclude Freeman will be denied.

4. Dr. Shamarial Roberson

Dr. Shamarial Roberson is an epidemiologist. She earned her Master of Public Health degree from Florida State University and her Doctorate in Public Health degree with a concentration in Epidemiology and Biostatistics from Florida Agricultural and Mechanical University. She was employed with the Florida Department of Health from 2013 to 2021 as an epidemiologist, evaluator, researcher, administrator, State Chronic Disease Director, and finally as the Deputy Secretary for Health. Dr. Roberson is currently the President and CEO of DSR Consulting and Management LLC, an epidemiological consulting firm. ECF No. 47-2, PageID.1366. Dr. Roberson concluded "to a reasonable degree of scientific probability," based on the case information, her literature review, and her education, training, and experience, and that "there is no epidemiological evidence to determine that the health outcomes reported by Ardis Thompson and Gloria Thompson were caused by exposure to PT Alpine." *Id.* PageID.1372.¹⁰

¹⁰ Dr. Roberson's original report is at ECF No. 44-19. Her supplemental report at ECF No. 47-2, PageID.1363–86 was updated to address "newly provided medical records" for Mrs. Thompson and "additional studies." Dr. Roberson states that this additional information did not change her original conclusion.

In the Thompsons’ motion to exclude Dr. Roberson’s testimony in this case, they argue that Dr. Roberson did not cite to or rely on any epidemiological studies addressing the chemicals found in PT Alpine, and that her study of the chemicals was instead limited to “reviewing risk assessments of only 000.4% of the chemicals in PT Alpine.” ECF No. 45, PageID.1115. The Thompsons contend that Dr. Roberson’s conclusion is “pure conjecture” and should be excluded. *Id.*

Orkin responds that Dr. Roberson’s opinion that no epidemiological studies, literature, or incident reports exist demonstrating a causal link between PT Alpine or its ingredients and the Thompsons’ claimed symptoms and conditions is reliable and helpful to the trier of fact in this case. Orkin asserts that Dr. Roberson’s opinion that no epidemiological evidence exists *is* evidence precluding a finding of specific causation for the Thompsons because the “absence of epidemiological evidence showing a causal relationship between [a chemical] and [the complained of symptoms or injury]” is significant. ECF No. 47, PageID.1324–25. *See Wilson v. Merrell Dow Pharms.*, 893 F.2d 1149, 1154 (10th Cir. 1990) (finding “particularly significant” the “absence of epidemiological evidence showing a causal relationship between Bendectin and birth defects.”).

Dr. Roberson testified that she conducted an extensive epidemiology literature review and review of other public documents, including from the Centers of Disease Control and Prevention (“CDC”)

and the National Poison Data System, to prepare her report. Roberson Dep. 13:16–15:7, ECF No. 47-2, PageID.1391. She also reviewed the PT Alpine label and the Safety Data Sheet for PT Alpine and its ingredients and looked for epidemiological literature related to health outcomes for those chemicals. ECF No. 47-2, PageID.1367; Roberson Dep. 34:6–35:15, 41:2–16, ECF No. 47-2, PageID.1396, 1398. Dr. Roberson concluded that, “[a]fter conducting an extensive review, there is no evidence identified in the literature as it relates to cases of acute or chronic pesticide-related illness directly associated with PT Alpine ... and adverse health effects.” ECF No. 47-2, PageID.1367. The Court finds that the Thompsons’ challenge as to the sufficiency or scope of Dr. Roberson’s review goes to the weight of Dr. Roberson’s opinion, not its admissibility.

The Thompsons also incorrectly contend that Dr. Roberson’s assessment was limited to reviewing only PT Alpine’s active ingredients, comprising 0.4% of the chemicals found in PT Alpine. Dr. Roberson explained that she looked for and did not locate any epidemiological studies, peer-reviewed literature, or case reports establishing a causal link between the Thompsons’ symptoms and PT Alpine, including its three active ingredients, as well as its inert ingredients, petroleum distillates and petroleum gases. Roberson Dep. 15:8–18, 27:20–29:9, 49:24–51:3, 58:6–60:9, ECF No. 47-2, PageID.1391, 1394–95, 1400, 1402. Dr. Roberson however did cite studies establishing causal links between the Thompsons’ reported health complaints of depression, pain, and

burning sensations and their documented preexisting medical conditions of rheumatoid arthritis and prediabetes. ECF No. 47-2, PageID.1368–70. The Thompsons do not challenge this opinion and have failed to credibly attack Dr. Roberson's methodology.

Accordingly, Plaintiffs' motion to exclude Dr. Roberson will be denied.

IV. CONCLUSION

For the reasons set forth above, the Court **GRANTS IN PART** and **DENIES IN PART** Defendant's Motion to Exclude Plaintiffs' Expert Witnesses (ECF No. 44) and **DENIES** Plaintiff's Motion to Exclude Defendant's Expert Witnesses (ECF No. 45).

Specifically, for the reasons stated above, Plaintiffs' expert Dr. David Goldsmith's general causation opinion that PT Alpine is capable of causing the Thompsons' claimed depression is **EXCLUDED** but his general causation opinion that PT Alpine was capable of causing the Thompsons' claimed dermal ailments is **ADMITTED**.

Plaintiffs' expert Dr. Christopher Weis's opinion that the timing and progression of Thompsons' health effects are consistent with excessive exposure to the PT Alpine pesticide mixtures that were applied in their home and are a likely cause of those health effects is **ADMITTED**.

Plaintiffs' expert Dr. Gerald Shiener's diagnoses of the Thompsons of posttraumatic stress disorder with secondary depression, based on his

March 15, 2021 virtual examination, is **ADMITTED** but his opinion that those diagnoses were caused by the Thompsons' exposure to PT Alpine is **EXCLUDED**.

Defendant's expert Dr. Jeffrey Parker's opinion based on his November 12, 2022 independent medical evaluation of the Thompsons is **ADMITTED**.

Defendant's expert Ryan Weidling's opinion regarding the potential risks to the Thompsons from exposure to PT Alpine is **ADMITTED**.

Defendant's expert Elaine Freeman's opinion regarding the potential human health effects resulting from exposure to the components contained in PT Alpine is **ADMITTED**.

And finally, Defendant's expert Dr. Shamarial Roberson's opinion that there is no epidemiological evidence to determine that the health outcomes reported by the Thompsons were caused by exposure to PT Alpine is **ADMITTED**.

IT IS SO ORDERED.

Dated: January 2, 2025

/s/Terrence G. Berg

HON. TERRENCE G. BERG

UNITED STATES DISTRICT JUDGE